
New Taxa of *Lonchocarpus* (Fabaceae: Milletieae) from the Venezuelan Guayana

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ABSTRACT. Prior to the treatment of *Lonchocarpus* for the *Flora of the Venezuelan Guyana*, two new species endemic to the northern part of Estado Bolívar, Venezuela, and partly extending into adjacent Territorio Federal Delta Amacuro, are described: *Lonchocarpus crassispermus*, related to *L. hedyosmus*, and *Lonchocarpus imatacensis* from the subgenus *Neuroscapha*. In addition, *Lonchocarpus tubicalyx* is validated.

Lonchocarpus crassispermus Poppendieck, sp. nov. **TYPE:** Venezuela. Bolívar: 17 km de Upata sobre la carretera nueva Upata-San Felix, en las cercanías de los campamentos "El Paraiso" y "La Yagua," 24-28 km NE del caserío Los Rosos, "mahomo chino," Nov. 1965 (fr), *C. Blanco* 382 (holotype, VEN; isotypes, MO, NY—2 sheets, US—2 sheets). Figure 1.

Arbor parva. Folia 9-foliolata, foliolis anguste ovatis, rugosis, marginibus distincte involutis, costa, marginibus et infra venis lateralibus pilosis. Inflorescentia terminalis, floribus geminatis. Corolla roseo-purpurea, epunctata. Vexillum basi distincte callosum. Ovula 4. Pedunculus fructus articulatus. Fructus 1-2-seminalis, indehiscens, aliquantum lignosus, lanceolatus ad oblongus, planus sed conspicue incrassatus circum semina, 7.5-12 cm longus. Semina reniformia 7-9 mm crassa.

Small evergreen tree. Leaves 9-foliolate; stipules caducous; petiole with rachis 7-9 cm long, pubescent. Leaflets firmly membranaceous, epunctate, narrowly ovate, rugose, margin distinctly involute, 3.5-7 × 1.3-2.3 cm, pilose on margin, central vein above, and on principal veins beneath. Inflorescences terminal on leafy shoots, strigose, spikes 8.5-17 cm long, peduncle 2.5-5 cm long. Flowers geminate; floral peduncle ± persistent after anthesis, 2.8-3 mm long; pedicel 2-3 mm long, with caducous subulate bracteoles above the midpoint. Calyx zygomorphic, 5-dentate with 3 triangular carinal and 2 obtuse vexillar teeth, punctate, strigose outside, glabrous within, 4-5 mm long. Corolla rose-purple, wing and standard petal strigose outside, wing and rarely keel petal sparsely dotted. Standard reflexed, clawed, lamina ovate to orbicular with prominent basal callosities, 8 × 8 mm. Staminal tube straight,

filaments connate for $\frac{2}{3}$ to $\frac{3}{4}$, anthers glabrous. Ovary densely sericeous, ovules 4. Fruit on jointed peduncle, 1-2-seeded, indehiscent, slightly woody, flat but abruptly and conspicuously thickened at the seed region, lanceolate to oblong, base attenuate, apex rounded and mucronulate, vexillar margin inconspicuously keeled, 7.5-12 cm long and 3.4-4 cm wide, at seed region 0.8-1 cm thick, otherwise 0.5-0.6 mm thick, ochre, slightly tomentose. Seeds thick, kidney-shaped, 1.1-1.5 cm long and 7-9 mm diam.

Distribution and phenology. Endemic to the northeastern part of Estado Bolívar, Venezuela, in moist to dry forests, 200-300 m; flowering in July and August, ripe fruits produced in November. Common names: Jebe, Mahomo chino.

Additional specimens examined. VENEZUELA. BOLÍVAR: 6 km S de El Perú, 15 km SE de El Callao, 300 m, 61°48'W, 7°18'N, 3 July 1960 (fl, lvs), *Little* 17531 (MER); 17 km de Upata sobre la carretera nueva Upata-San Felix, en las cercanías de los campamentos "El Paraiso" y "La Yagua," 24-28 km NE del caserío Los Rosos (type locality), Aug. 1964 (fl, lvs), *Blanco* 226 (NY, US, VEN); 7 km N de San Pedro de las Bocas, 200 m, 62°54'W, 7°00'N, "mahomo chino," 27 July 1978 (fl), *Liesner & González* 5750 (MO); entre Encrucijada y El Pao, 62°40'W, 8°03'N, 28 Aug. 1954 (fl, fr), *Trujillo* 247 (MER, S).

The small rugose leaflets, in combination with the large fruits and the nearly spherical seed, make this species unique. Flowers and inflorescences, however, agree well with both *Lonchocarpus hedyosmus* Miq., which extends from the Estado Guárico in Venezuela to the Guianas, and with the predominantly Colombian *L. macrocarpus* Benth., which has its eastern limit of distribution in Estados Zulia and Mérida.

Lonchocarpus imatacensis Poppendieck, sp. nov. **TYPE:** Venezuela. Territorio Federal Delta Amacuro: E de Río Grande, NE de El Palmar, cerca de los límites del Estado Bolívar, "Jebe," 13 Jan. 1965, *Marcano-Berti* 560 (holotype, VEN; isotypes, MO, NY, VEN). Figure 2.

Arbor magna sempervirens. Folia 5-foliolata. Inflorescentia terminalis, floribus geminatis. Corolla roseo-pur-



Figure 1. *Lonchocarpus crassispermus* Poppendieck. —A. Flowering branch. —B. Fruits. —C. Fruit, side view. —D. Leaf base, from below. —E. Flower, not yet expanded, indumentum left out to show glands on calyx. —F–I. Standard, floral buds, keel, and wing petal. (A from *Blanco* 226; B, C from isotype at NY; D–J from holotype.)

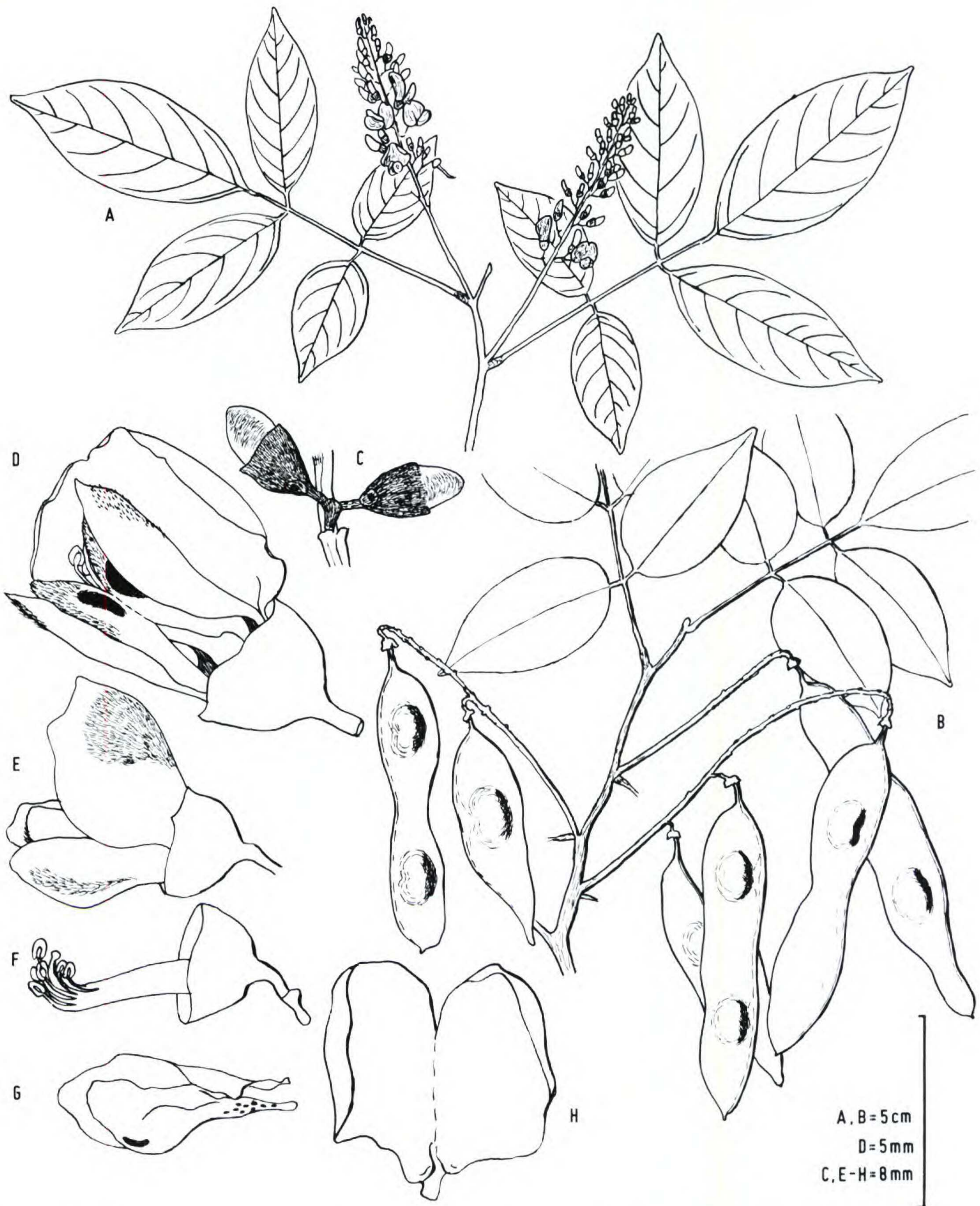


Figure 2. *Lonchocarpus imatacensis* Poppendieck. —A. Flowering branch. —B. Branch with mature fruits. —C. Details of inflorescence with flower buds. —D. Flower from below, to show indumentum and position of glands on keel petal; indumentum on calyx left out, as in E and F. —E. Flower, side view. —F. Flower, corolla removed. —G. Keel and wing petal, natural position. —H. Standard. (A from *Blanco 146*, after a drawing by B. Manara; B from isotype at NY, C-H from holotype.)



Figure 3. *Lonchocarpus tubicalyx* Pittier ex Poppendieck. — A. Branch, inflorescences, and new leaf. — B. Mature leaf. — C. Detail of inflorescence with flower buds. — D. Flower, indumentum on calyx left out to show lactifers. — E. Flower, standard petal removed. — F. Flower section of lower part. G–I. Standard, wing, and keel petal. — J. Staminal tube expanded. — K. Calyx expanded. (All from the holotype.)

purea, epunctata praeter 1–2 glandulas apice petalorum carinalium. Vexillum basi distincte callosum. Ovula 8–10. Pedunculus fructus articulatus. Fructus 1–7-seminalis, indehiscens, anguste oblongus ad lanceolatus, planus sed bullatus circum semina, (5.5–)11–14 cm longus. Semina reniformia, castanea, 1.8 mm crassa.

Large evergreen tree up to 26 m tall, trunk diameter up to 40 cm. Leaves 5-foliolate; stipules caducous; petiole with rachis 3.5–6.5 cm long. Leaflets membranaceous, not pellucid-punctate, ovate to obovate, base cuneate, apex bluntly acuminate, (2.5–)6–8(–9.5) × 2.5–5 cm, glabrous, veins prominent above. Inflorescences terminal on leafy shoots, glabrous, 9–14 cm long, peduncle 2.2–2.8 cm long. Flowers geminate; floral peduncle ± persistent after anthesis, 1.2–1.8 mm long; pedicel 1.3–1.7 mm long, with ovate, punctate bracteoles at the base of the calyx. Calyx cyathiform, truncate at base,

epunctate, strigose outside, glabrous within, 3 mm long, 5 mm wide. Corolla rose-purple, strigose outside, glabrous within, epunctate except for one or two large glands on the abaxial side of the keel petal. Standard reflexed, clawed, lamina orbicular to subquadrate, apically sinuate to $\frac{1}{2}$ of its length, with prominent basal callosities, 7–8 mm long and 3.2–3.5 mm wide. Staminal tube ± straight, somewhat persistent after anthesis, filaments connate for $\frac{2}{3}$ to $\frac{3}{4}$, anthers glabrous. Ovary densely sericeous, 8–10-ovulate. Fruit on jointed peduncle, 1–7-seeded, indehiscent, flat but slightly bullate around the seeds, narrowly oblong to lanceolate, base stipitate, cuneate, apex rounded, obliquely acuminate, (5.5–)11–14 cm long and 1.3–1.8 cm wide, thickness at seed region 3.3–3.5 mm, dorsally 0.9–1.1 mm and ventrally 0.4 mm, dark ochre to castaneous, glabrous. Seed kidney-shaped, castaneous, 9 × 7 mm, 1.8 mm thick.

Distribution and phenology. Endemic to northern Estado Bolívar and the border with Territorio Federal Delta Amacuro, Venezuela; rainforests, 50–350 m; flowering May to July, fruits collected from November to January.

Additional specimens examined. VENEZUELA. BOLÍVAR: Altiplanicie de Nuria, on \pm level forest on trail between El Cruzero and slightly beyond pica 101, ESE of Villa Lola, Jan. 1960 (lvs, fl), *Steyermark* 86361 (NY, US, VEN); Sierra Imataca, Río Toro (Río Grande), between Río La Reforma and Puerto Rico, N of El Palmar, 14 Dec. 1960 (fr, lvs), *Steyermark* 88036 (NY, US); alrededores del campamento "Las Pavas," arriba del Salto Pará, 6°12'N, 64°15'W, 22 May 1978 (fl, lvs), *Steyermark et al.* 117181 (VEN). TERRITORIO FEDERAL DELTA AMACURO: NE de El Palmar, E de Río Grande, cerca de los límites del Estado Bolívar (type locality), June 1965 (fl, lvs), *Blanco* 146 (MO, NY, VEN), 24 May 1964 (fl, lvs), *Marcano-Berti* 194 (MO, NY, VEN), 26 May 1964 (fl, lvs), *Marcano-Berti* 197 (MO, NY, VEN); Sierra Imataca, Cerro de La Paloma, E side of Río Cuyubini, vicinity of large granitic boulders, 18 Nov. 1960 (lvs, fr), *Steyermark* 87647 (NY).

This species is peculiar because of the fruit, which is bullate around the seeds, which distinguishes it from the southern Brazilian *Lonchocarpus nitidus* Benth, with which it has been misidentified. It belongs to subgenus *Neuroscapha* Pittier (= *Neuroscaphi* Benth), the South American species of which form a series of closely related allopatric species whose ranges sometimes partly merge.

***Lonchocarpus tubicalyx* Pittier ex Poppendieck.**

TYPE: Venezuela. Apure: San Juan de Payara, arbusto de 4–5 m, 11 Feb. 1941 (fl, lvs), *Charadon* 237 (holotype, VEN). Figure 3.

Arbor parva. Folia decidua, 7–11-foliolata, foliolis ovatis acuminatis, iuventute discoloribus: supra fuscatis, infra griseis strigosis glabrescentibus. Florescentia coetanea, inflorescentia lateralis, floribus in verticillastris paucifloris dispositis. Calyx basin leviter inflatus, basin maculis lactiferibus punctatis. Corolla roseo-purpurea. Vexillum basin attenuatum, ecallosum. Ovula 5. Fructus ignotus.

Small deciduous tree 4–5 m tall. Bark gray. Leaves 7–11-foliolate; stipules caducous; petiole with rachis 10–15 cm long. Leaflets membranaceous, epunctate, ovate, apex bluntly acuminate, 4.5–8 \times 2.2–3.5 cm, glabrous above, strigose to subglabrous beneath, young leaflets discolorous with blackish upper and grayish lower side. Flowering coetaneous. Inflorescences lateral, in axis of old leaves, composed of 2–3 spikes on short shoots 1.5–2.5 cm long.

Spikes 7.5–11.5 cm long with a sterile basal part 1.5–2.3 cm long. Peduncle reduced, flowers spaced so as to appear verticillate, pedicel 1.3 mm long, bracts 0.5–1 mm long, rounded to ovate. Calyx campanulate, slightly zygomorphic with upper margin undulate, lower margin 3-dentate and upper side slightly inflated, strigose outside, glabrous within, with prominent latex ducts especially at the base, 4–5 mm long and 3.5–6 mm wide at anthesis. Corolla purple, only slightly and sporadically pubescent. Standard orbicular, attenuate at base, without basal callosities, 5.5–7.5 mm long and 6.5–9 mm wide. Staminal tube 8–11 mm long, straight, filaments connate for $\frac{3}{4}$, base broadened, with two long dorsal slits. Ovary apically slightly bent, glabrous in the apical third of its length, otherwise strigose, ovules 5. Fruits unknown.

Distribution and phenology. Presently known from only two collections in Apure and Delta Amacuro, Venezuela, flowering in February.

Additional specimens examined. VENEZUELA. TERRITORIO FEDERAL DELTA AMACURO: Río Manimo, Vuelta Triste, 20 Feb. 1911 (fl, lvs), *Bond et al.* 145 (GH, NY, US).

Since Pittier (1944: 102) lacked a Latin diagnosis, it is necessary to validate this name, but because of the lack of fruits some uncertainties remain. *Lonchocarpus tubicalyx* belongs to an aggregate of allopatric species with coetaneous inflorescences, discolorous juvenile leaves, and purple flowers that usually can easily be differentiated by their fruits. The name is here applied to two widely separated collections, which are unique because of the very short pedicels by which the flowers appear to be arranged in verticillasters. This, and the somewhat smaller flowers, distinguish them from the Brazilian *L. denudatus* Benth. Its Venezuelan and partly Colombian relatives *L. crucisrubierae* Pittier and *L. fendleri* Benth (= *L. sanctae-marthae* Pittier) have obtuse leaves instead of acuminate ones. The two cited collections are almost identical except for slight differences in the size of the flowers, those from Delta Amacuro being at the upper and those from Apure being at the lower range of the measurements given above.

Literature Cited

Pittier, H. 1944. Leguminosas de Venezuela, vol. I. Bol. Tec. Min. Agric. y Cría, Caracas 5: 1–171.